

REMARKS

Claims 1 through 16 of the application as filed are again presented for examination.

The Examiner has rejected all claims of the application as filed. Independent Claims 1 and 16 are rejected as allegedly anticipated by the United States patent of Ackles. Dependent Claims 2 through 15 are rejected as allegedly rendered obvious by Ackles in view of the United States patent of Kraft. For the reasons set forth below, such rejections indicate a failure to appreciate the invention as claimed and must be reversed.

The present invention is directed to a remote camera positioner for operating a camera underwater. As mentioned in the application, the invention overcomes the overheating that has characterized systems employing electric motors by providing direct hydraulic (or pneumatic) drive mechanisms. In particular, an upper positioner 48 is fixed to a boom support 46 and to a lower positioner 54 by means of a generally-inclined bracket 68. The structures of the upper and lower positioners 48 and 54 are substantially identical. However, they are fixed to the common bracket 68 so that their axes of symmetry, which are coincident with central shafts, are oriented orthogonal to one another. As a result, the positioner 12 of the invention provides a remote user with the ability to rotate and control the position of a

camera (fixed to a mounting plate 70) with respect to both a pan axis 52 and a tilt axis 58.

Each positioner causes the camera head to be moved or positioned with respect to an axis by the controllable angular rotation of a central shaft 96 that is fixed to an inner body 114. The rotation of the shaft 96 is controlled by an actuator 98. In the case of the upper positioner 48, the shaft 96 is (indirectly) fixed to the mounting plate 60 to prevent its rotation. Rather, such rotation is transferred to the inner body 114 that is, in turn, fixed to an outer body 124 that is fixed to the inclined bracket 68 to which the camera head is fixed by means of the lower positioner 54. As a result, the inclined bracket 68 is caused to rotate, causing angular rotation of the camera head with respect to the pan axis 52.

In contrast, the central shaft 96 of the lower positioner 54 is free to rotate while the outer body 124 of the lower positioner 54 is fixed at the lower end of the inclined bracket 68. As a result, the camera head, indirectly fixed to the shaft 96 of the lower positioner 54, is rotatable with the shaft 96 about the tilt axis 58.

The Examiner has taken the position that Ackles teaches a positioner in accordance with the invention. The Examiner's

argument is based, in part, upon his allegation that Ackles teaches apparatus for positioning a camera head in which the attitude of the camera head is responsive to the angular displacement of the output shaft of the positioner.

This is clearly not the case. Ackles teaches an articulated, hydraulically-actuated boom for for manipulating objects under water. In Ackles, a video camera 48 is fixed to the bottom segment 12d of the articulated boom. The camera 48 is provided for facilitating observation and manipulation of a head 32 for grasping an elongated object 68. The Examiner has incorrectly interpreted the head 32 to be equivalent to a camera head in Applicant's remote camera positioner by mis-citing a portion of the Ackles patent (col. 6, lines 30 through 60) in support of the allegation that the head 32 might itself be a camer head. It is suggested that the Examiner re-read this section which makes it clear that the only camera head contemplated in Ackles is the video camera 48 whose position is fixed with respect to the bottom section 12d of the boom. ✓

The fact that the attitude of the bottom section 12d to which the video camera 48 is fixed is changeable in response to hydraulic force is also irrelevant to Applicant's invention. The Examiner, in attempting to fit Ackles to the claimed invention, analogizes the hydraulic rams 16 of Ackles to Applicant's central

shaft 96. This is an impossible stretch. The hydraulic rams 16 of Ackles are by no means analogous to the shaft 96. Ackles' rams 16 are axially extensible and absolutely not angularly rotatable for angularly positioning a camera head. As a result, there exists absolutely no imaginable argument that would support the Examiner's position that Ackles teaches, anticipates or, in fact, is particularly relevant to the claimed invention. ✓

The other reference, Kraft, is cited as showing an inner housing having a rotatable cylindrical main shaft. The Examiner has provided absolutely no support for making such a combination. Without a hint in either reference to make such a combination, a proper obviousness rejection is not stated. See, for example, in In re Dembiczak, 50 U.S.P.Q. 2d 1614, (Fed. Cir. 1999).

Nevertheless, even if it were proper to combine such references, such combination would not come close to Applicant's invention. The shaft 224 upon which the Examiner relies is neither similar nor does it provide a like function to the shaft 96 of Applicant's positioner. Hence, even if one were to make the combination of teachings upon which the Examiner's position is based with regard to Claims 2 through 15, one would still fail to derive Applicant's claimed invention.

Applicant has reviewed the art cited but not relied upon and, while of interest, none of such are, either alone or in combination with any other prior art known to the Applicant either anticipates or renders Applicant's claimed invention obvious.

Independent Claim 1 and the claims that depend therefrom are directed to apparatus for remotely controlling the position of a camera head. Such independent includes, among other limitations, "at least one hydraulically-actuated positioner having an output shaft" whose angular displacement is "responsive to fluid flows transmitted through a pair of lines..." The camera head is coupled to a positioner "so that the attitude of said camera head is responsive to the angular displacement of said output shaft". This is clearly not shown by the art of record for reasons as set forth above.

Independent Claim 16 is directed to apparatus for remotely controlling the position of a camera head. Such independent includes, among other limitations, "at least one positioner having an output shaft" whose angular displacement is "responsive to pressure transmitted through a pair of lines..." The camera head is coupled to a positioner "so that the attitude of said camera head is responsive to the angular displacement of said output shaft". This is clearly not shown by the art of

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record as set forth above.

For the foregoing reasons, the art relied upon by the Examiner neither anticipates nor renders Applicant's claimed invention obvious. Prompt allowance and issuance of all pending claims are therefore earnestly solicited.

Respectfully submitted,



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